



Chicago Metropolitan
Agency for Planning

Water Supply Planning in Northeastern Illinois: A Regional Approach

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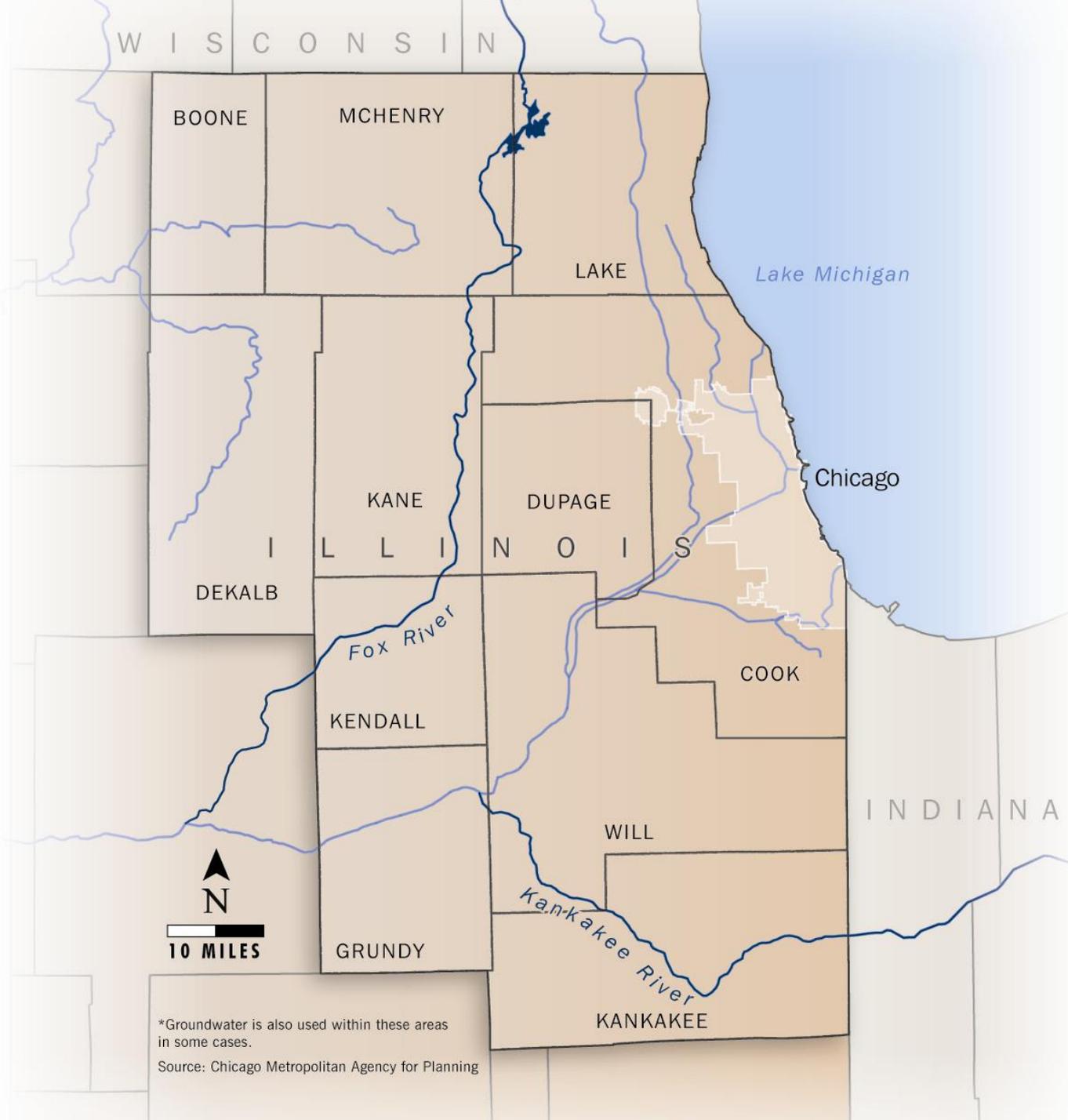
September 2, 2009

NE IL Regional Water Supply Planning Group (RWSPG)

Stages of Group Development -

- * Forming (*last qtr. 2006*)
 - * Storming (2007)
 - * Norming (2008)
 - * Performing (2009)
 - * Adjourning (November '09)

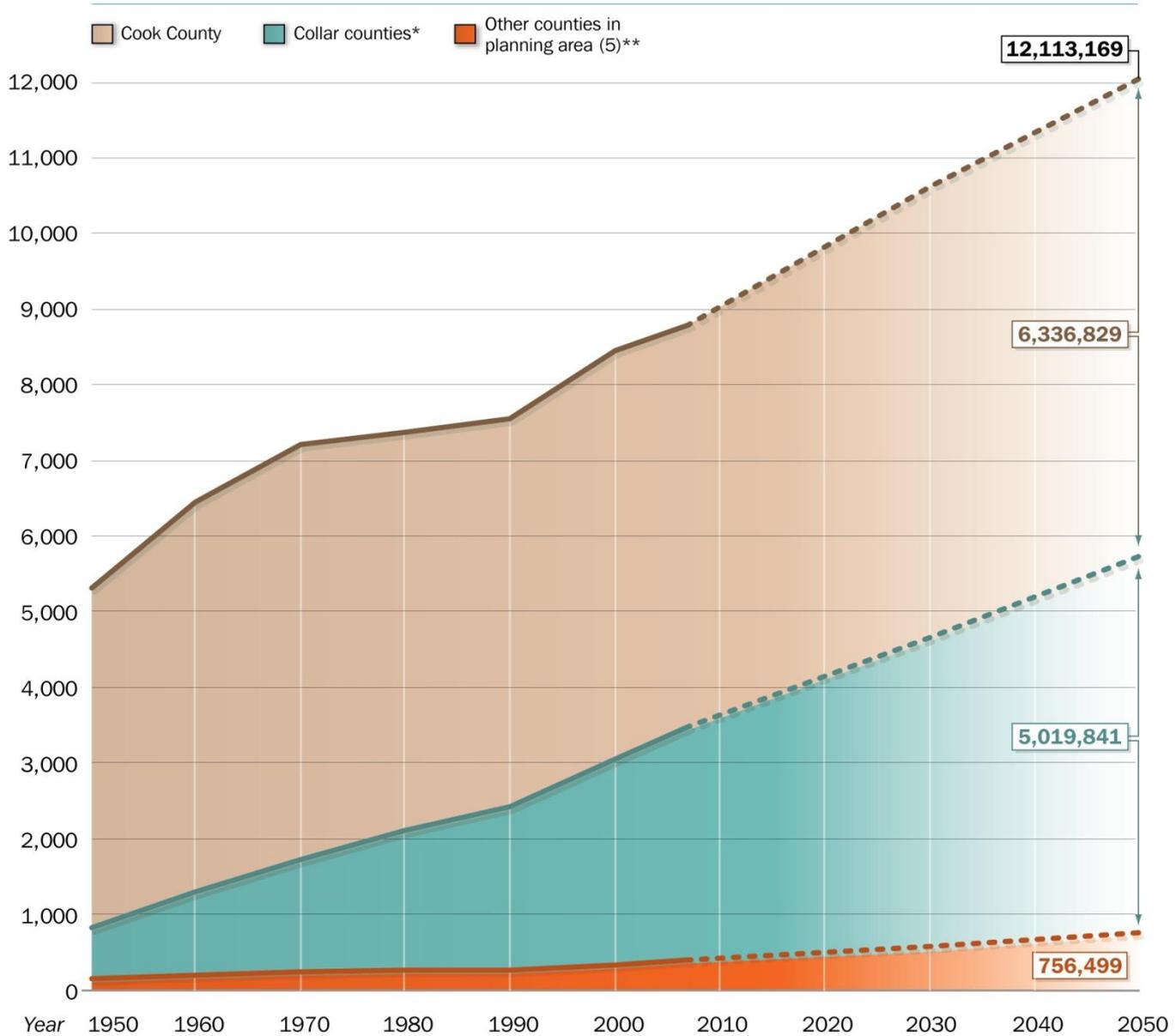




*Groundwater is also used within these areas in some cases.
Source: Chicago Metropolitan Agency for Planning

Distribution of Population in Northeastern Illinois

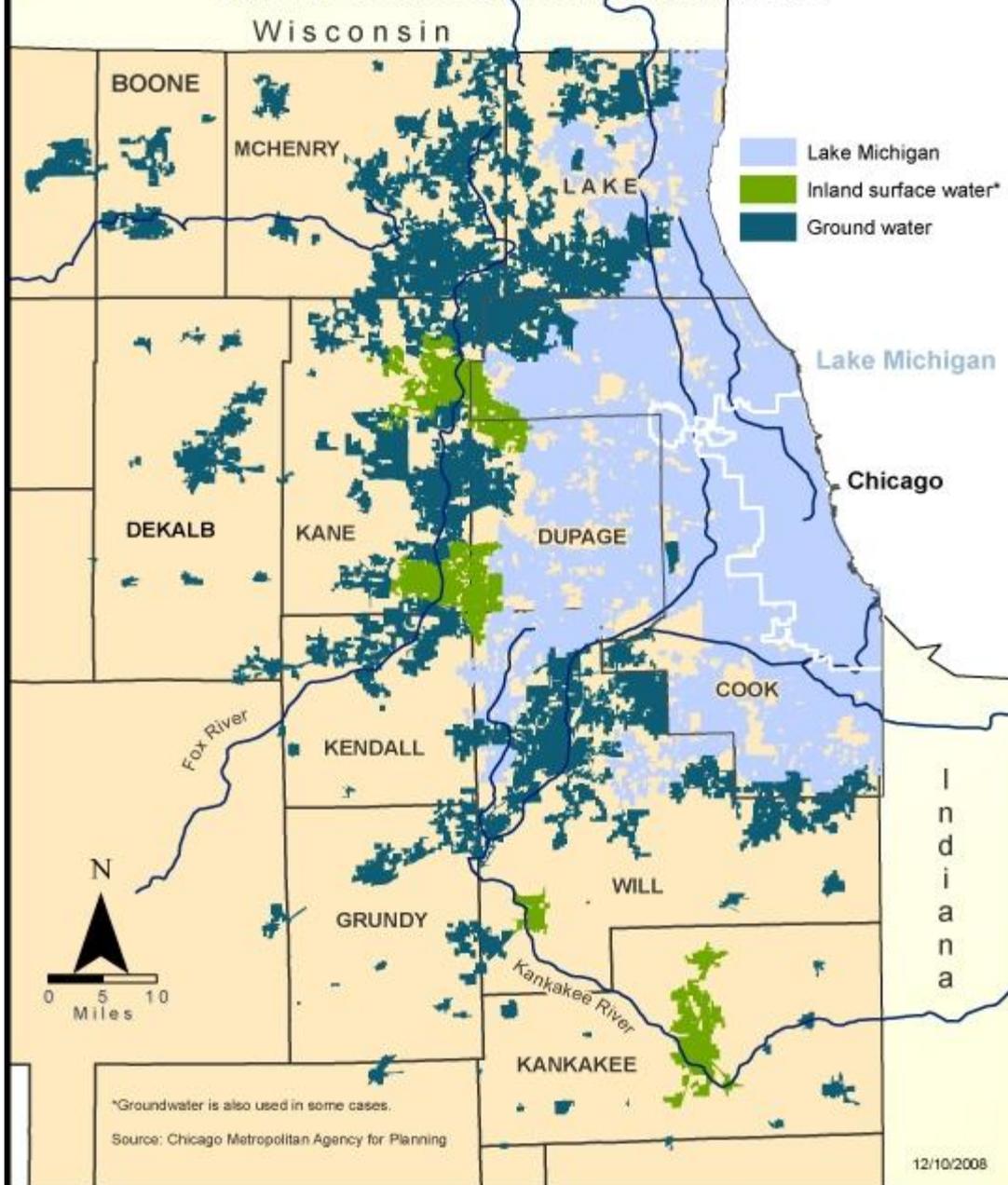
Total population, in thousands



Sources: U.S. Census Bureau; Northeastern Illinois Planning Commission; al Chalabi Group, Ltd., Chicago Metropolitan Agency for Planning

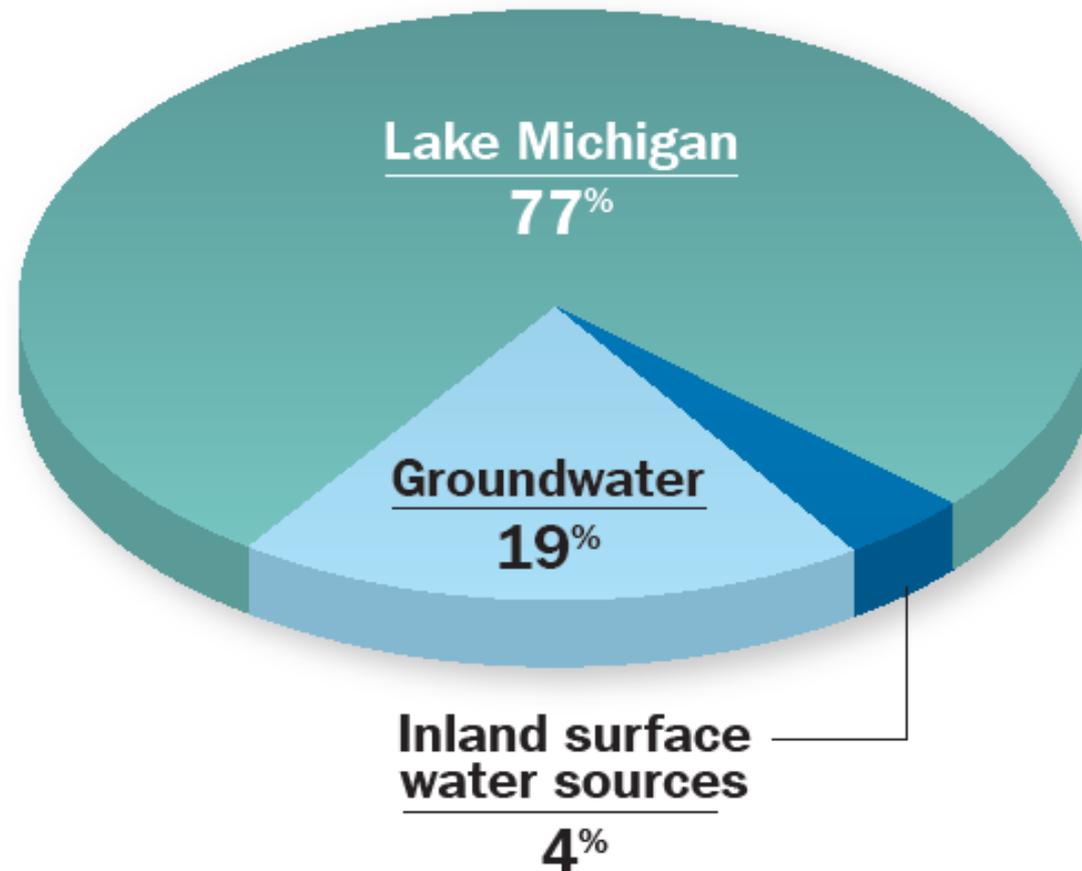
* DuPage, Kane, Lake, McHenry, Will ** Boone, DeKalb, Grundy, Kankakee, Kendall

Water Sources for Public Supply in Northeastern Illinois



Sources of Drinking Water for Northeastern Illinois

11-county region population, 2000



Source: CMAP

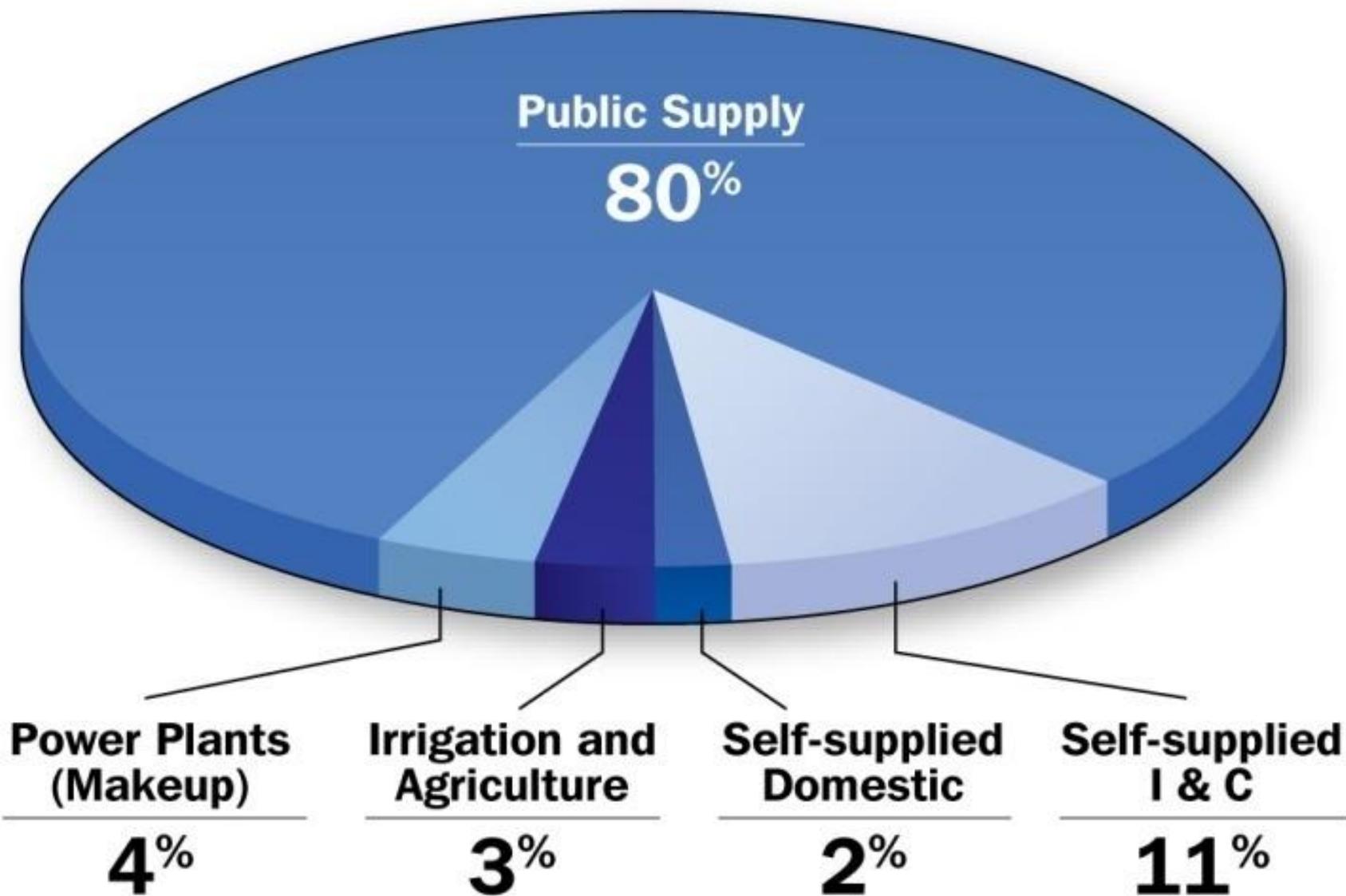


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Water-Demand Scenarios

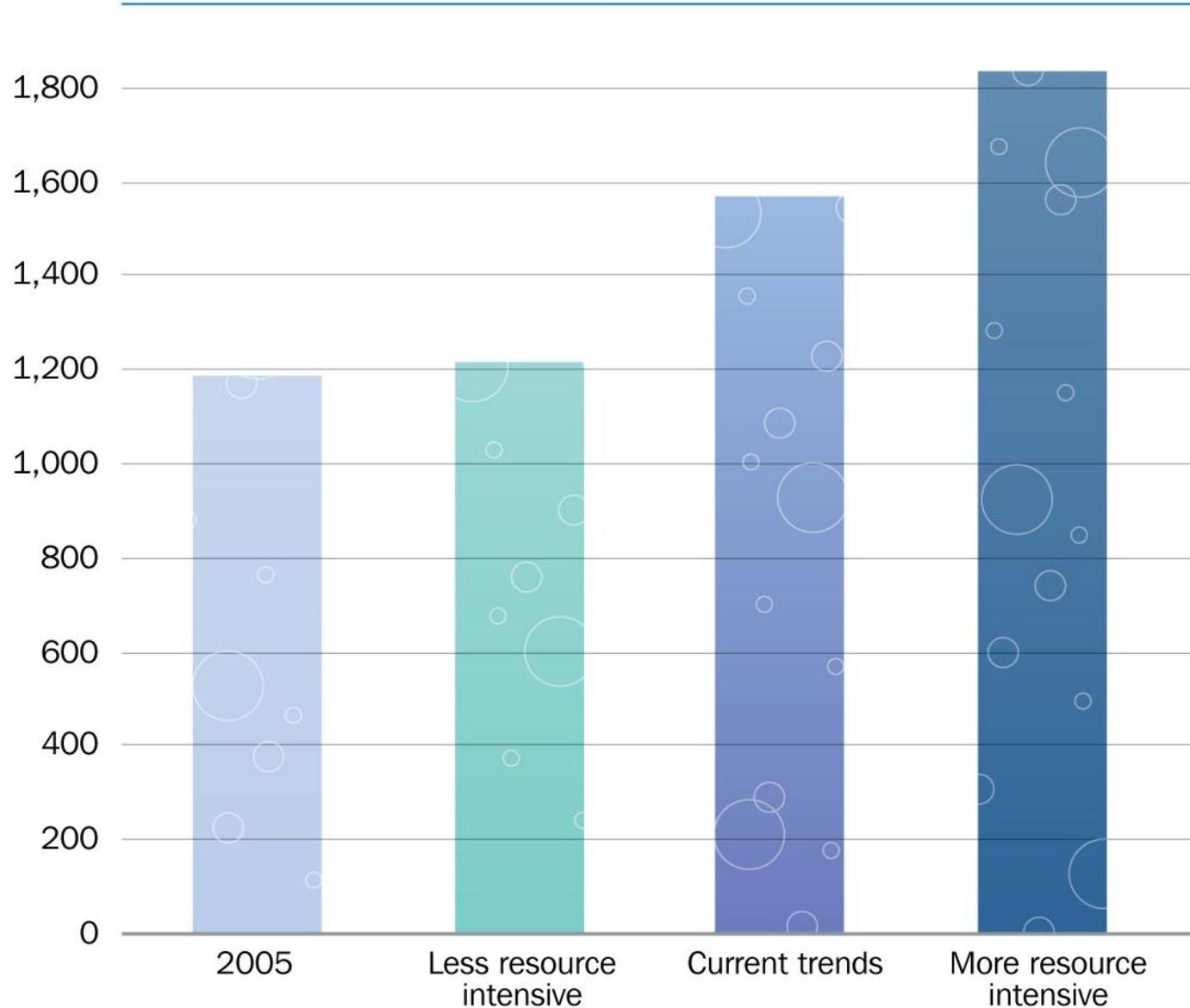
- 1) Current Trends / Reference – trends that approximate recent history
- 2) Less Resource Intensive – reduce water demand
- 3) More Resource Intensive – increase water demand





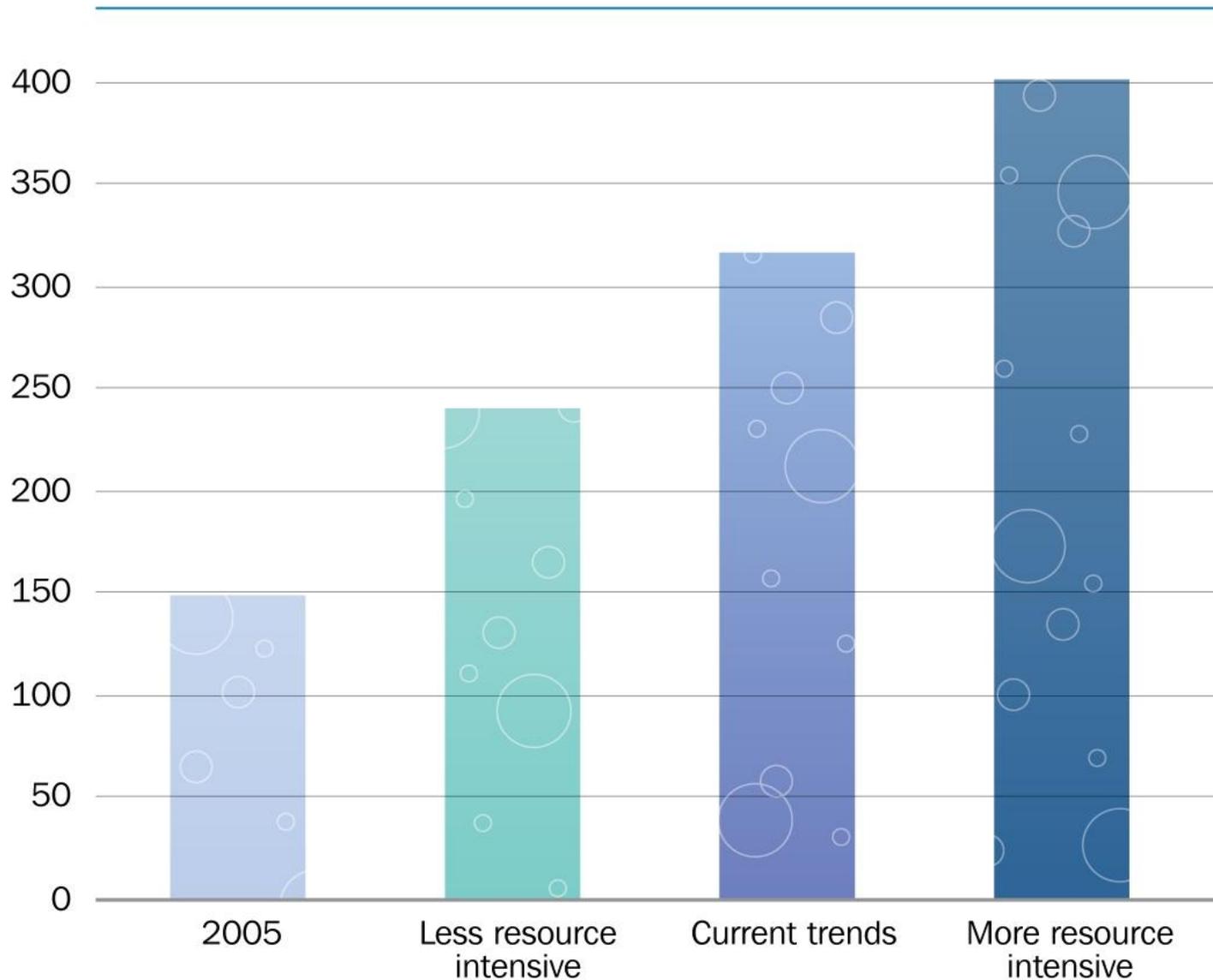
Source: B. Dziegielewski and F.J. Chowdhury, 2008

Public Supply, Total Withdrawals: 2005 vs. 2050 Scenarios, in millions of gallons per day



Source: Dziegielewski and Chowdhury, 2008

Public Supply, Groundwater Withdrawals: 2005 vs. 2050 Scenarios, in millions of gallons per day



Source: Dziegielewski and Chowdhury, 2008

ISWS Groundwater Study

Deep-bedrock aquifer –

“cannot be counted on (indefinitely) to meet all future demand scenarios across the 11-county region.”

Shallow-bedrock aquifer –

consequences include:

- * interference drawdown,
- * streamflow capture



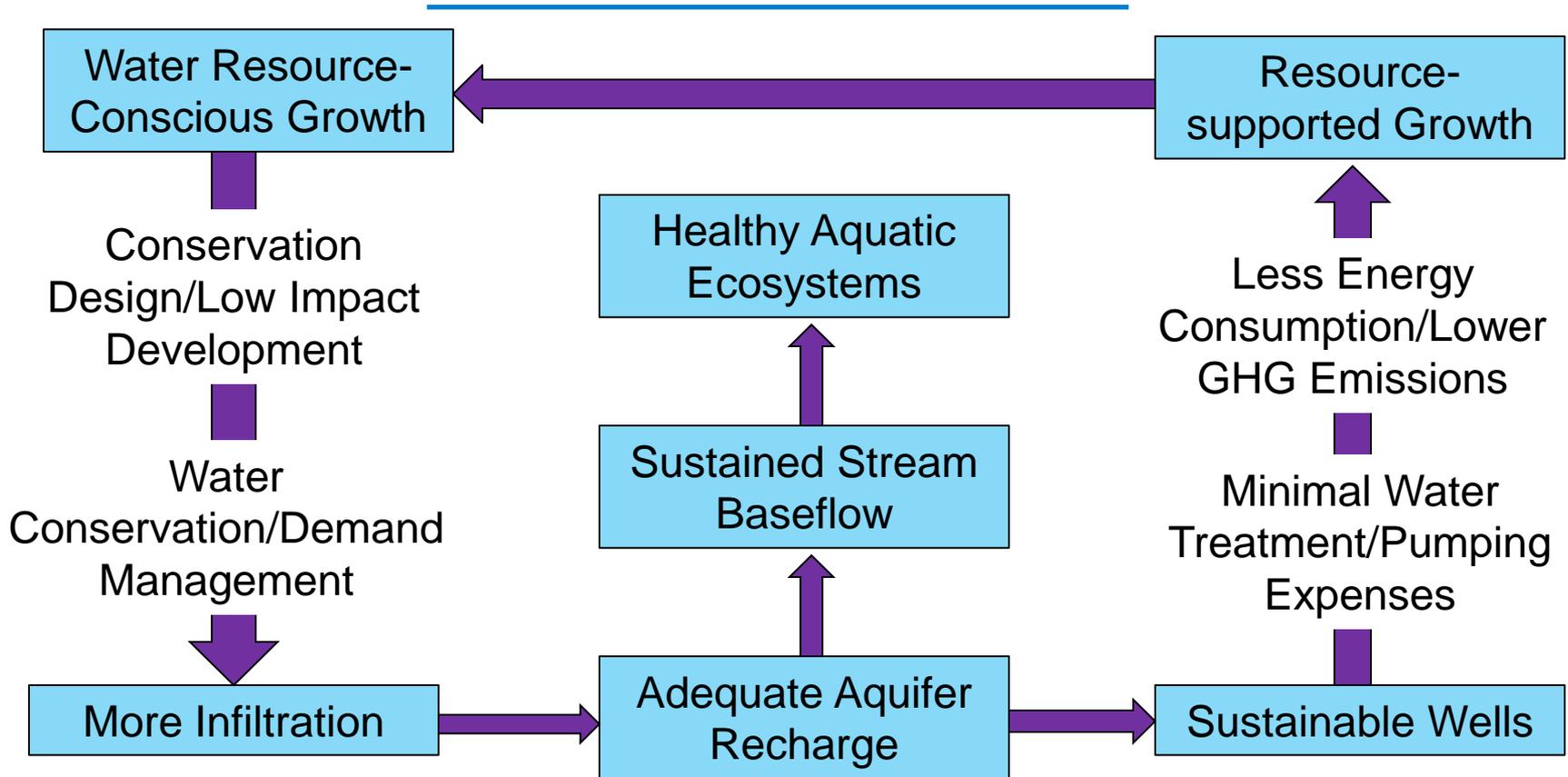
Land & Water

Development Patterns vs. Water Supply:

- Recharge
- Infrastructure Costs
- Per Capita Demand

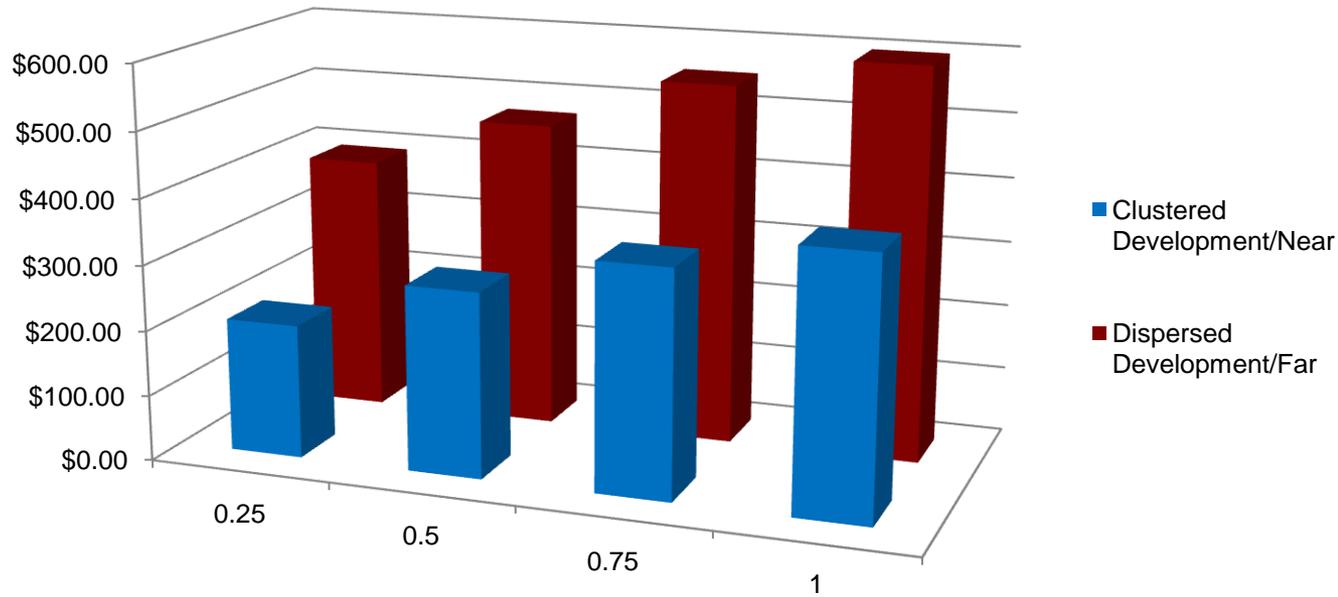


Recharge



Infrastructure Costs

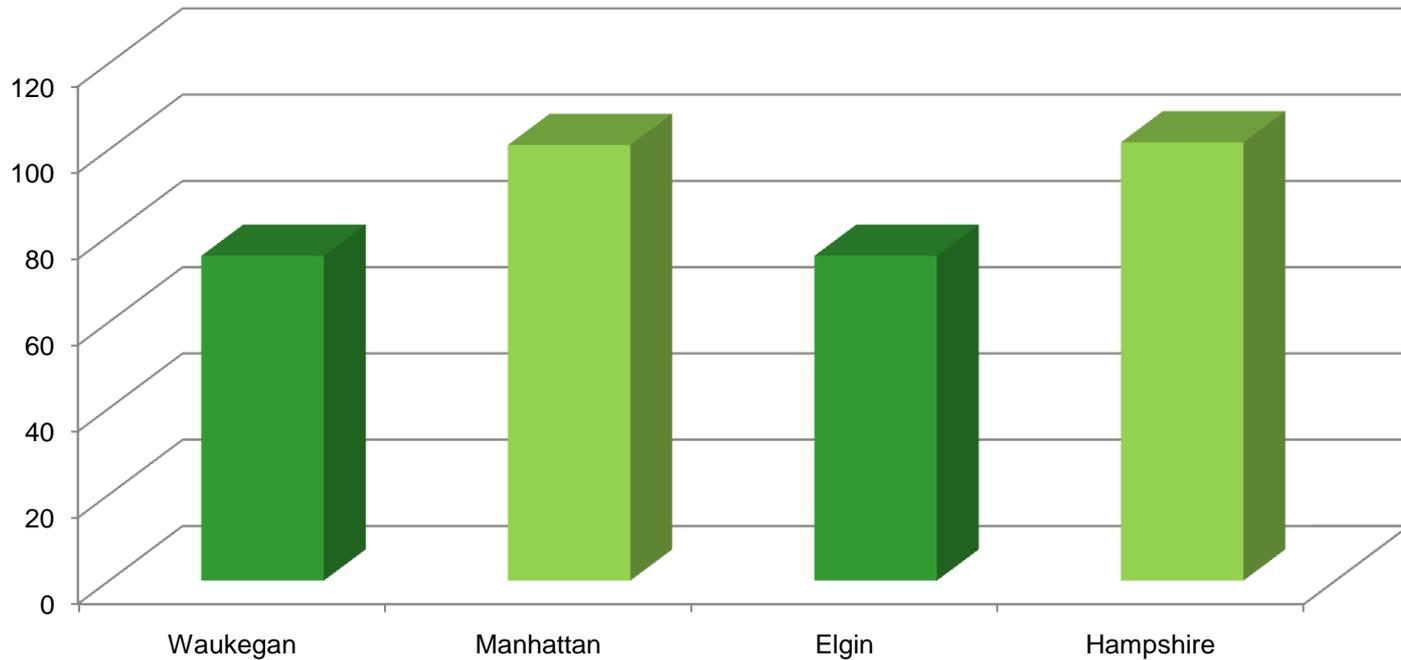
Annual Infra Costs/HH



Modified from Speir, Cameron and Stephenson. 2002

Per Capita Demand

Mean GPCD



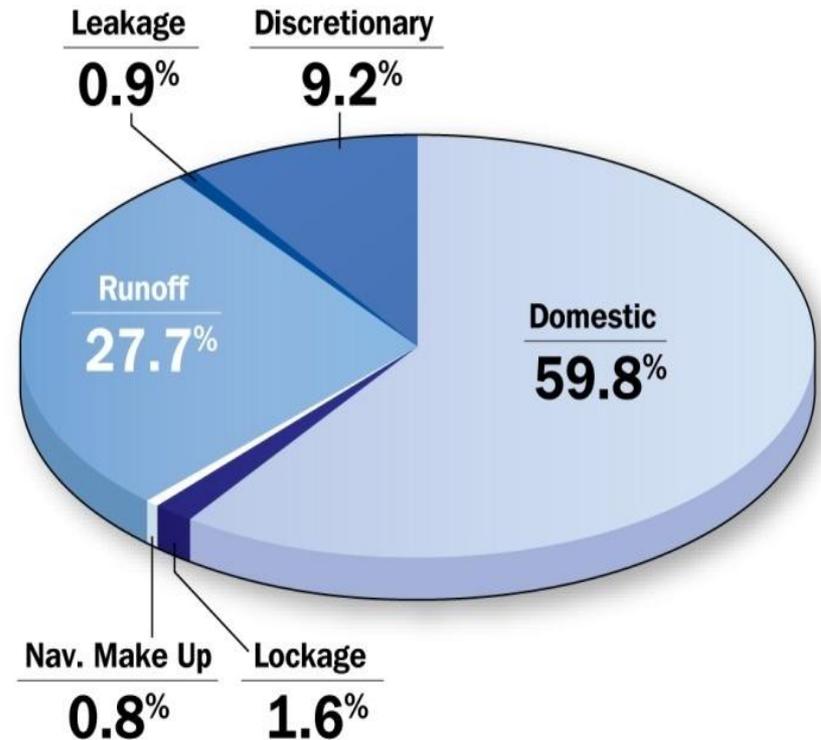
Proposed Tools for Integrating Land Use & Water Supply Planning

- Region-wide
 - Local Planning Technical Assistance Act
 - Conservation Plans w/in Comp Plans
 - Water Revolving Funds
 - Prioritize rehab of systems
 - DRI
 - GW withdrawal thresholds, cumulative w/d impacts
 - *GO TO 2040*
 - Emphasize infill/redevelopment, ecologically-sensitive & recharge areas



Proposed Tools for Integrating Land Use & Water Supply Planning

- Lake MI Region
 - Stormwater Retention
 - New Permittees w/in Service Region
 - Proactive IDNR Conservation Efforts



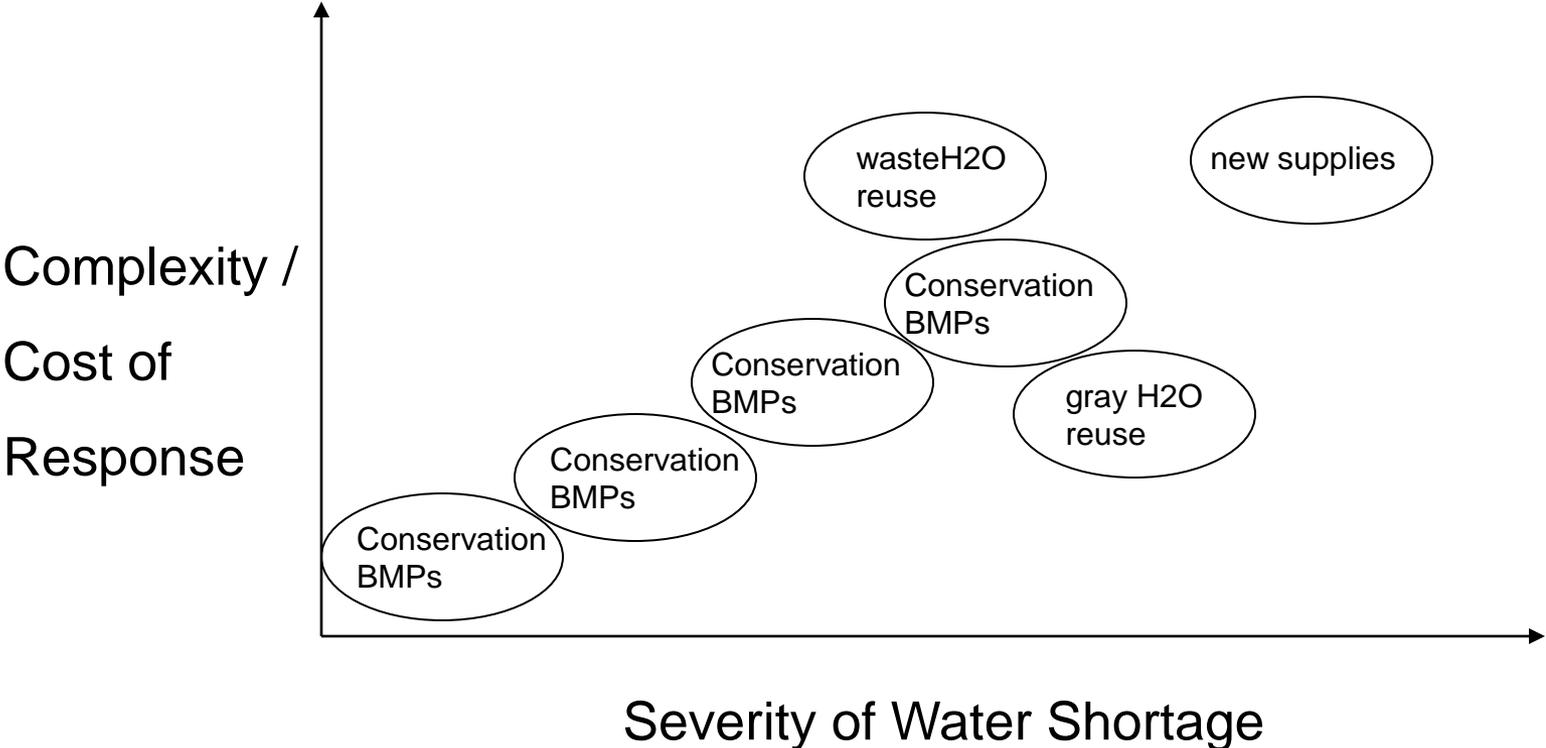
Source: D. Injerd, 2009, "Lake Michigan Water Availability"

Proposed Tools for Integrating Land Use & Water Supply Planning

- Groundwater-dependent Communities
 - 1983 Water Use Act
 - Recharge Areas
- Inland River Communities
 - Watershed Planning



Managing Supply to Meet Water Demand



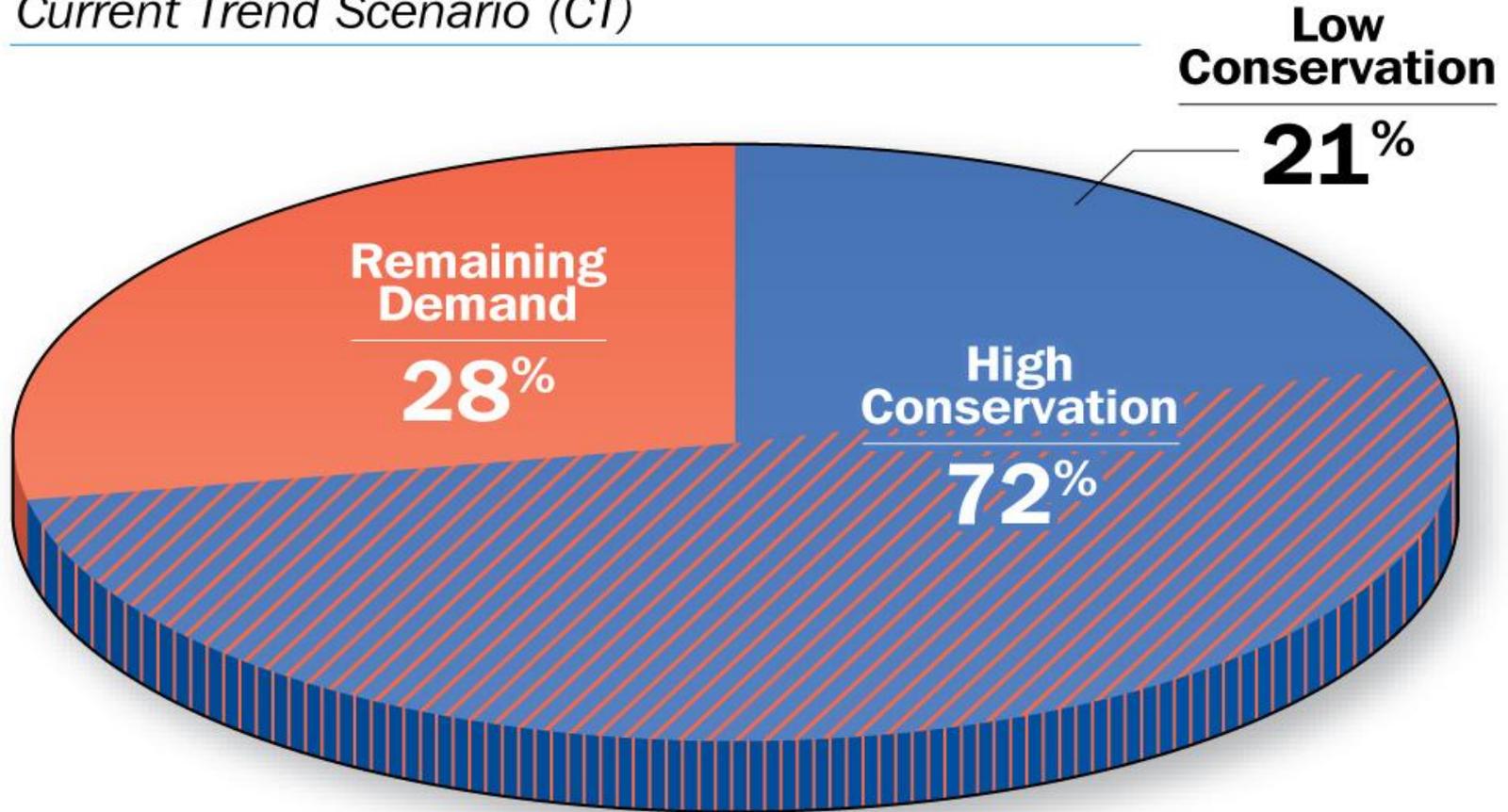
14 Adopted Water Conservation Measures

- * Residential Surveys
- * Retrofits
- * Leak Detection/Repair
- * Metering
- * Large Landscapes
- * High-Efficiency Washers
- * Public Information
- * Wholesaler Incentives
- * Water Rates
- * Waste Prohibition
- * High-efficiency Toilets
- * School Education
- * Conservation Coordinator
- * Commercial, Industrial and Institutional



Potential of Conservation to Meet Incremental Demand in Public Supply Sector

Current Trend Scenario (CT)

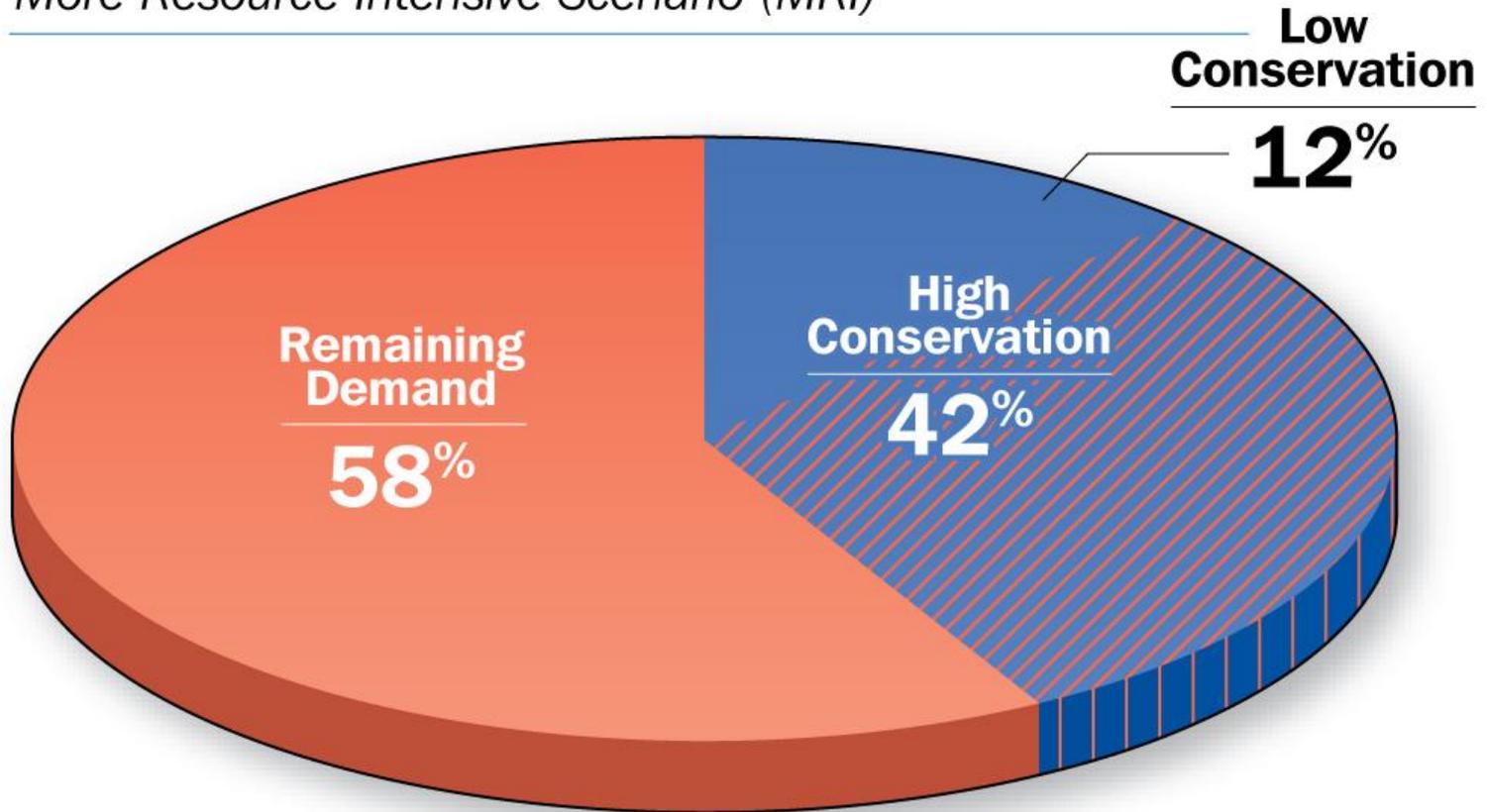


*2005-2050 Current Trends scenario, incremental demand = 381 MGD

Source: Chicago Metropolitan Agency for Planning

Potential of Conservation to Meet Incremental Demand in Public Supply Sector*

More Resource Intensive Scenario (MRI)

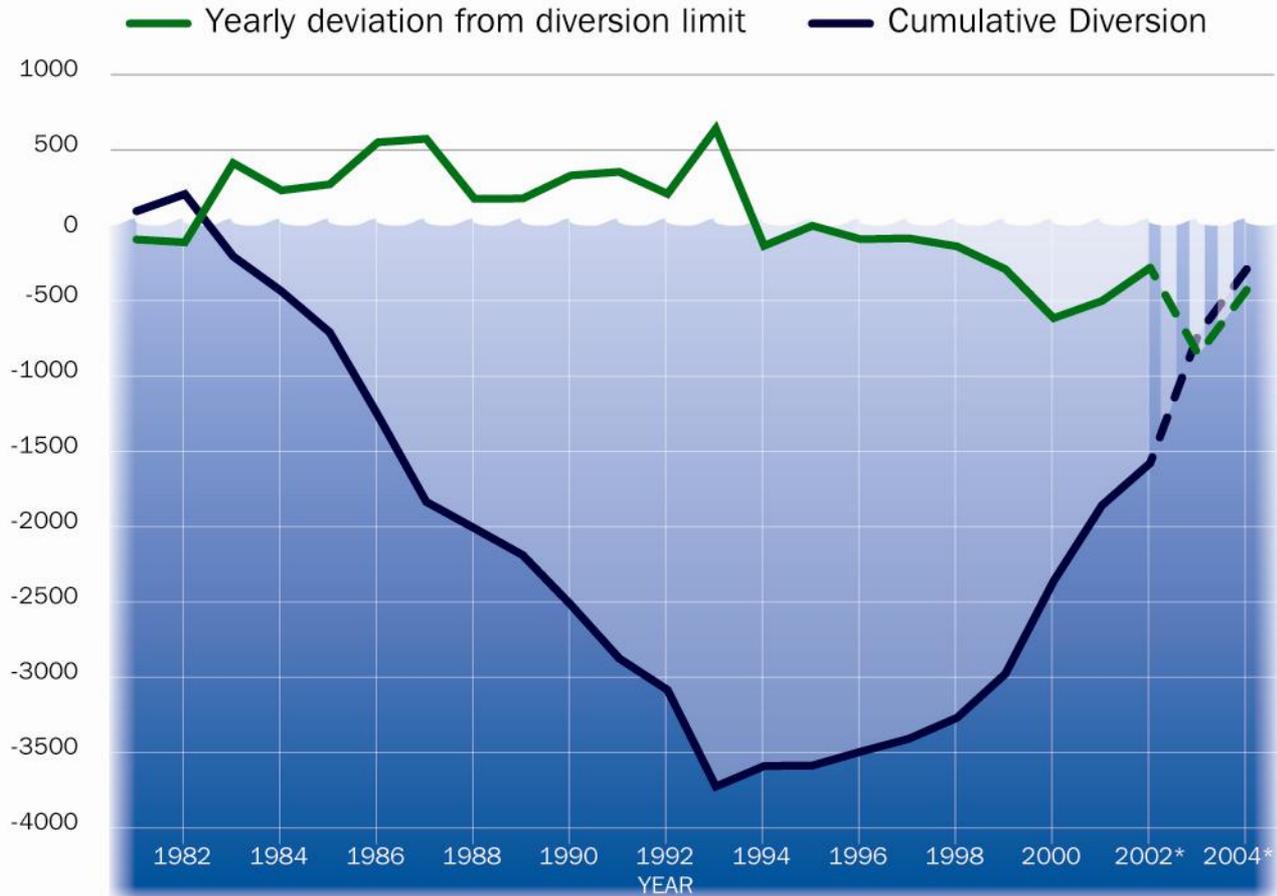


*2005-2050 More Resource Intense scenario, incremental demand = 648 MGD

Source: Chicago Metropolitan Agency for Planning

Status of Illinois' Lake Michigan Diversion

in cubic feet per second



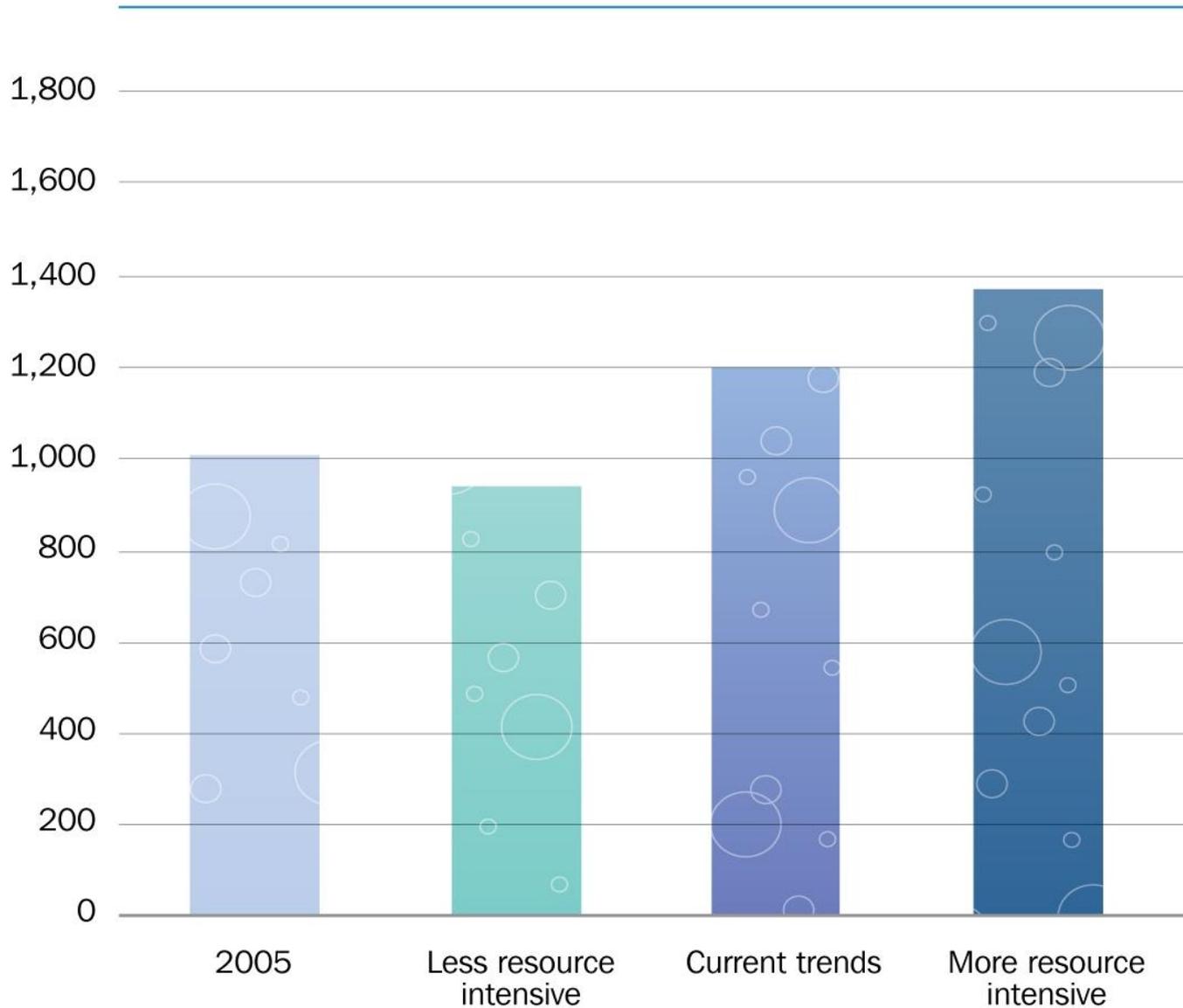
*Note: Years 2002 through 2004 are estimates

Source: Illinois Department of Natural Resources (Office of Water Resources), January 2006



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Public Supply, Lake Michigan Withdrawals: 2005 vs. 2050 Scenarios, in millions of gallons per day



Source: Dziegielewski and Chowdhury, 2008

Illinois Diversion in 2050 - MRI

Diversion Component	Lake MI Water (MGD)
Domestic Pumpage	1,397
Stormwater Runoff	546
Discretionary	66
Lockage	58
Leakage	24
Navigation Makeup	23
<i>TOTAL DIVERSION</i>	2,114

Policy-oriented Challenges

- * Mismatch between institutional structure of management and regional nature of the resource
- * Bifurcated state-legal scheme
- * Water rates do not reflect the true cost of resource delivery

To do in 2009

- 3 Remaining meetings,
 - Sept. 22nd, Oct. 27th, Nov. 24th
- NE IL Regional Water Supply Plan
 - to be published December 2009
- Regional water supply planning and action requires ...
 - Funding,
 - Political will,
 - And more ...



Thank you!

<http://www.cmap.illinois.gov/watersupply/default.aspx>

